

REMARKS

Upon entry of the present amendment claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 are pending in the application. Claims 3, 19, 42, and 53 have been amended in accordance with the requirements of U.S. patent practice. Applicants respectfully request entry of the preliminary amendment.

Claims 3, 42 and 53 have been amended as explained below with respect to the section 112 rejection. Claim 42 has been further amended to recite that module (I) takes on all of the function of effect and part of the function of coloring or solely for imparting color, as supported by dependent claims 47-48. Claim 53 has been further amended to recite that module (I) takes on all of the function of effect and part of the function of coloring, as supported by dependent claim 47. The amendments to claims 42 and 53 are also supported in the specification as filed at page 13, lines 9-16, and page 14, lines 7-13. Claim 19 has been amended to correct a typographical error.

Amendments to, cancellation of, and additions to, the claims, as set forth above, are made in order to streamline prosecution in this case by limiting examination and argument to certain claimed embodiments that presently are considered to be of immediate commercial significance. Amendment or cancellation of the claims is not in any manner intended to, and should not be construed to, waive Applicants' right in the future to seek such unamended or cancelled subject matter, or similar matter (whether in equivalent, broader, or narrower form) in the present application, and any continuation, divisional, continuation-in-part, RCE, or any other application claiming priority to or through the present application, nor in any manner to indicate an intention, expressed or implied, to surrender any equivalent to the claims as pending after such amendments or cancellations.

1. Rejection of claims under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

Claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiner states:

The Examiner has re-read the Specification, and it is unclear what elements therein correspond to the claimed percents by weight of the constituents (a21), (a22) and

(a23)...It is pointed out to applicant that the Specification for (a23) the recitation of when "(a22) (is) from 1 to 30% by weight of at least one organic color pigment." The parameter for inclusion of (a23) as "at least 20 to 89 % by weight water when" (a22) includes "1 to 70% by weight of at least one inorganic color pigment" is not shown at pages 75 and 76. The Specification does not teach the particular relationship of water and pigment as recited.

Applicants respectfully submit that, as indicated in Applicants Amendment of 2/08/2010, at page 15, para. 2, the weight limitations in claim 3 are indeed supported at page 75, specifically lines 1-21, in cooperation with the limitations supported on page 74, last paragraph.

In particular, contrary to the Office Action, the recitation of 20 to 89% by weight water when (a22) includes 1 to 70% by weight of inorganic pigment is indeed supported by the indicated portions of the specification, contrary to the statements in the Office Action.

The source of the Examiner's reference to pages 71 and 72 is unknown in the absence of further explanation.

Applicants have amended claim 3 merely to clarify the relevant weight limitations, without changing the substance of the claim.

Reconsideration and removal of the written description rejection of claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 is respectfully requested in view of the foregoing remarks.

Rejections under 35 U.S.C. §103

To briefly recap, the present invention relates to a modular (mixer) system for preparing aqueous coating materials in precision-attunable shades and optical effects, especially for automotive OEM finishing and refinish and in the painting of plastics. As such, the invention was developed as an improvement to prior art modular systems discussed in the present application, as background to the invention.

In particular, one known mixer system in the prior art comprised substantially water-free color and/or effect base colors and at least one aqueous, pigment-free mixing varnish. In contrast, the present inventors found that modular systems were capable of further improvement in terms of their hiding power.

Another patent on a known mixer system (EP-A-0 608 773, assigned to DuPont) disclosed a modular system comprising an effect module, containing at least 20% by weight water, and an aqueous, pigment-free mixing varnish. As stated in the present application, a

disadvantage of such a system is that, owing to the high water content of the effect module, aluminum-based metallic effect pigments in the module can undergo decomposition, accompanied by the evolution of hydrogen, which can impair the storage stability of the effect module. Similarly, still another patent (EP-A-0 614 951, assigned to Herbert) disclosed a modular system comprising a color module, containing at least 20% by weight water, and an aqueous, pigment-free mixing varnish. This modular system, however, permits only the preparation of solid-color topcoat materials.

Applicants, in contrast to these prior art modular systems, developed a modular system that has some similarities to prior art modular systems but, in addition, provides increased hiding power and storage stability, two very important properties of such coating materials. Importantly also, the present system avoids the problem of decomposition of metallic effect pigments. The achievement of this combination of properties would not have been obvious to one of ordinary skill in the art. In fact, it was unpredictable and unexpected, as explained further below.

In particular, Applicants' claims are directed to a process for preparing an aqueous coating material with precisely defined shade and optical effect, wherein the modules comprise: (I) at least one module comprising less than 5% by weight water that provides at least one of color and effect, (II) at least one aqueous color module, comprising at least one aqueous color-imparting base color, and (III) at least one pigment-free mixing varnish module comprising at least one aqueous, pigment-free mixing varnish. Optionally according to claim 3 but required by independent claims 42 and 53, the present modular system further comprises (IV) at least one pigment-free rheology module comprising an aqueous medium and at least one rheology control additive.

2. **Rejection of claims 3, 18, 19, 21, 22, 25, 26, 28 and 42-62 under 35 U.S.C. §103(a) as being unpatentable over Reusmann et al. (US 6,403,701) taken in combination with Brock et al. (US 5,672,649), hereafter "Reusmann" and "Brock," respectively.**

The Office Action states that Reusmann teaches a mixing system for producing water-dilutable coatings that may have "precisely defined tinting from various base colors" and "special-effect pigments." The water-dilutable coating compositions may comprise a plurality of base colors (A) and at least one pigment-free component (B). The Office Action states that Reusmann teaches the employment of at least one rheology-controlling additive. The base colors (A)

comprise less than 5% by weight of water, at least one pigment, an organic solvent, and at least one water-dilutable first binder. The component (B) comprises a pigment-free aqueous dispersion of polyurethane resin (second binder).

The Office Action states that Reusmann's component (A) is readable on the claimed (A1) base color in the claimed module (I), and the component (B) is readable on the claimed aqueous, pigment-free varnish module (III). The Office Action further states that the coating composition of Reusmann is taught to comprise a plurality of base colors (A). The base colors (A) comprise a combination of at least one organic coloring pigment and at least one inorganic coloring pigment, wherein suitable special-effect pigments can also be present. The Office Action states that solvents are water-soluble or water-thinnable solvents including alcohols. The Office Action notes that Reusmann discloses a formulation of a water-dilutable coating composition, which can be diluted with water, with or without prior partial removal of the organic solvent employed in preparing the resin.

The Examiner appreciates that Reusmann does not show present component (II) as a separate module of an aqueous color module comprising pigment, binder and water. 02/22/2010 Office Action at page 6, para. 2. The Office Action further notes that Reusmann "does not show three modules as the mixing system," although Reusmann "does disclose a mixing system that may comprise many modules as used for coating compositions using a plurality of base colors (A) separately storing each of said base colors." *Id.*

Accordingly, the Examiner does appreciate that Reusmann, by itself, cannot teach a major feature of the present invention, despite a number of similarities that can be expected to commonly exist among various module systems in the field. The Office Action, therefore, cites Brock for teaching the production and use of an aqueous coating system using modules. In particular, the Office Action states that Brock teaches the employment of an aqueous module II that comprises the system noted in the instant claims as (A2), comprising a colorant, a binder and water. The Office Action states:

The reference clearly shows the modules designated as (A2) and (IV), since at column 3 (lines 56-61) the reference teaches the use of "a rheology module." The reference shows the use of aluminum flake special effect pigments as known at column 2 (lines 54-63). Both references are drawn to aqueous coating mixer systems comprising modules. Since both are aqueous systems, the modules may be used from one in the other with a great

expectation of success by the artisan having an ordinary skill in the art. Since the reference to Reusmann et al. shows the modules for use, although the rheology module is not separate, but as an additive in other modules, as herein claimed, the use of a rheology module, as taught by Brock et al would have been a prima facie obvious step. Likewise, the use of the modular system (A2) as taught by Brock et al., in the mixer system of Reusmann et al., would have been an obvious step. The references are drawn to identical systems that employ some differing modules. Both systems are aqueous-based systems. As such, inclusion of the modules taught by Brock et al. for the many modules disclosed by Reusmann et al. would have been a prima facie obvious modification. Nothing unexpected has been shown on the record.

[02/22/2010 Office Action at page 6, last para., to page 7, para. 2.]

Applicants greatly appreciate the detailed basis of rejection but must respectfully disagree in regards to the invention of the independent claims.

Brock discloses a process for preparing aqueous coating systems by mixing at least two storage-stable pre-mixed aqueous modules, in which: (A) is an aqueous special effect module and (B) is an aqueous binder module. Abstract. The modular system of Brock can further include a dye module (C) containing pigments and water, (D) a rheology module, and (E) and crosslinking module. Col. 2, lines 20-36.

Applicants respectfully submit that it is quite apparent that Brock does not teach the substantially water-free color and/or effect-imparting module (I) of the presently claimed invention. Recalling, as explained above, that Reusmann does not show present component (II) as a separate module, i.e., an aqueous color module comprising pigment, binder and water, then citing Brock for such a module would also teach replacing Reusmann's substantially non-aqueous module (I) with an aqueous module as in Brock. In other words, a modular system, as a commercial necessity, is fundamentally based on required relationships among each of the modules in the system, so that individual modules among diverse systems are not subject to haphazard permutations. Accordingly, the inconsistencies between Brock and Reusmann cannot be ignored. Moreover, independent claim 53, by specifying that effect and color pigments are both in module (I), further distinguishes from the cited references in a further significant respect.

The Office Action asserts that it would be obvious to combine Brock's water-containing pigment module with Reusmann's mixing system to arrive at Applicants' claimed invention, because such modules are individually conventional. Applicants respectfully disagree, since Brock discloses a system where both an effect pigment module (A) and a color pigment module (C) are

water-containing, in the overall context of a system where all the modules contain water. The combination proposed by the Office Action ignores the clear teaching of Brock to *concomitantly replace* the Reusmann water-free pigment module with water-containing pigment modules, and instead proposes to *leave* Reusmann's water-free pigment module in the system, *adding* only Brock's optional water-containing color pigment module (C) to Reusmann's system, which of course conveniently arrives at Applicants' claimed mixing system.

If known modules in the prior art are always simply being used for their known purpose as asserted by the Office Action, Applicants submit that there would be no reason to keep the water-free pigment module, since the both color and effect would already be provided by Brock's water-containing pigment modules (A) and (C). Of course, Applicants have now discovered (and demonstrated in the application's comparative example) that a system with both a water-containing pigment module and a substantially water-free pigment module unexpectedly provides greater pigment loadings, ***but no such unexpected result has been shown in the prior art.***

Applicants respectfully submit that no reason or motivation has been shown, absent hindsight gleaned from Applicants' claimed invention, to adopt the selective approach of "picking and choosing" Brock's components for obtaining the combination that would be needed to support the Office Action's rejection. Taken as a whole, the cited combination fails to provide the requisite motivation for a *prima facie* case of obviousness. Furthermore, unexpected results are shown by the comparative data on page 96 of the present application. Thus, the Office Action is also incorrect in alleging that no unexpected results have been shown. In fact, "The comparison of the inventive example with the comparative example shows that the inventive coating material could be furnished with a higher pigment content than the noninventive coating material...the inventive multicoat system was clearly superior to the noninventive system." (Application as filed on page 97.)

Response to Arguments

The Office Action states that Applicants have failed to show why the inclusion of the various modules, including the pigment and the rheology module, would not be obvious to a skilled artisan, since both references are drawn to multiple module systems and since the references both show the conventionality of the several elements employed in identical

capacities. 02/22/2010 Office Action at page 7, last para., to page 8, first para.

Applicants respectfully submit that the present invention is directed to a modular system and, hence, the fact the elements are individually disclosed in prior art references cannot teach the present invention. The Office Action has shown no motivation or reasonable explanation for modifying Reusmann to obtain the presently claimed relationship between individual elements that is the evident key to the invention. There is no basis for alleging that individual elements in diverse prior art modular systems are interchangeable in the absence of a reasonable motivation, as would be appreciated by one of ordinary skill in the art of automotive coatings. Furthermore, the fact that the modification is directly contrary to the clear and express requirements of the references, alone or in combination, strongly suggests that the arbitrary “picking and choosing” simply cannot be a matter of interchanging equivalents. Again, the skilled artisan would have a high level of expectation of failure when arbitrarily combining diverse teachings in way that is inconsistent with the teachings of both Reusmann and Brock.

The Office Action states that “Applicants have not demonstrated any clear reasoning or evidence as to why the use of the modules of Brock et al. would [sic., not?] be suitable in the system of Reusmann et al.” 02/22/2010 Office Action at page 8, lines 7-9. Applicants respectfully note that unobviousness is not based on clear reasoning.

The Office Action also repeatedly states that “Nothing unexpected has been shown on the record.” 02/22/2010 Office Action at page 9, lines 6-7. Such statements are clearly contrary to the evidence of the comparative results in the present specification as filed, which the Examiner should fully consider rather than ignore their existence.

Reconsideration and removal of the obviousness rejection of the claims is respectfully requested in view of the foregoing remarks.

CONCLUSION

Applicants respectfully submit that the Application and pending claims are patentable in view of the foregoing amendments and/or remarks. A Notice of Allowance is respectfully requested. As always, the Examiner is encouraged to contact the Undersigned by telephone if direct conversation would be helpful.

Respectfully Submitted,

/MaryEGolota/
Mary E. Golota
Registration No. 36,814
Cantor Colburn LLP
(248) 524-2300

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CORRESPONDENCE ADDRESS ONLY

BASF CORPORATION
1609 Biddle Avenue
WYANDOTTE, MI 48192
Customer No. 77224

MEG/CPK